

PATENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

BAILEY, Richard, Alan
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ROYAUME-UNI

Date of mailing (day/month/year) 31 January 2002 (31.01.02)		IMPORTANT NOTICE	
Applicant's or agent's file reference RAB.P04378PC			
International application No. PCT/GB01/03242	International filing date (day/month/year) 19 July 2001 (19.07.01)	Priority date (day/month/year) 20 July 2000 (20.07.00)	
Applicant CROUCH, Peter, Anthony et al			

1. Notice is hereby given that the International Bureau has **communicated**, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:
KP, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EE, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 31 January 2002 (31.01.02) under No. WO 02/08726

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and the PCT Applicant's Guide, Volume II.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer J. Zahra
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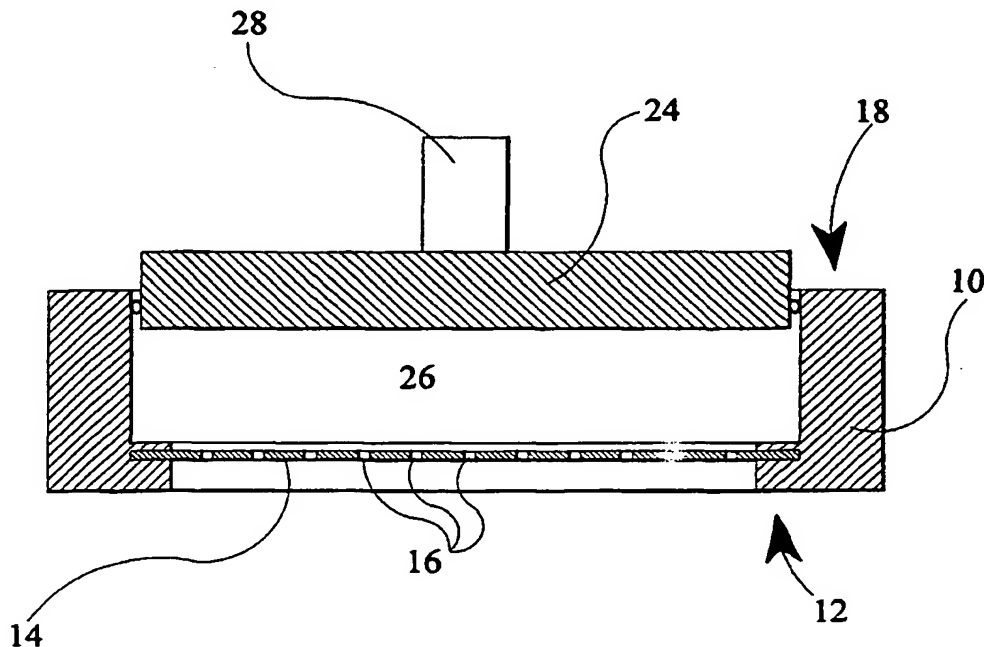
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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13 June 2002

[Continued on next page]

(54) Title: **EVIDENCE COLLECTION DEVICE AND METHOD**



(57) Abstract: An evidence collection device comprises a housing (10) having a closable lid (22), at least part of the housing (10) being defined by a strainer member (14) adapted to allow water entering the housing (10) to escape therefrom through the strainer member (14), but to collect, and retain within the housing (10), particulate matter carried by the water. A method of collecting evidence using the device is also described.



WO 02/08726 A3



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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0017671.9 20 July 2000 (20.07.2000) GB

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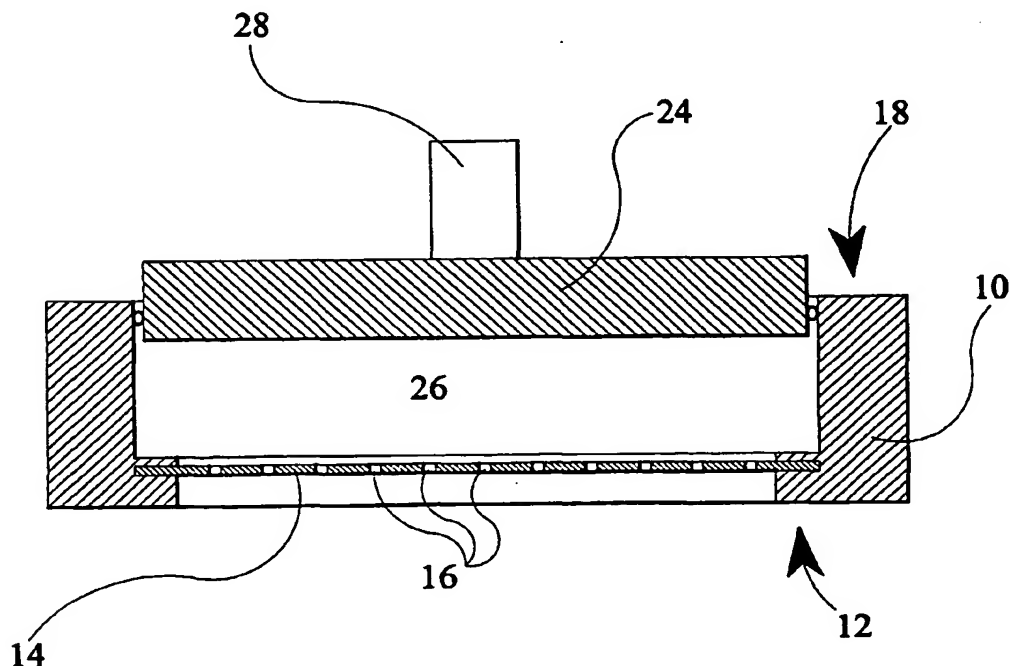
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: EVIDENCE COLLECTION DEVICE AND METHOD



(57) Abstract: An evidence collection device comprises a housing (10) having a closable lid (22), at least part of the housing (10) being defined by a strainer member (14) adapted to allow water entering the housing (10) to escape therefrom through the strainer member (14), but to collect, and retain within the housing (10), particulate matter carried by the water. A method of collecting evidence using the device is also described.

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EVIDENCE COLLECTION DEVICE AND METHOD

This invention relates to a device for use in the collection of evidence, and also to a method of collecting evidence, making use of the evidence
5 collection device.

It is common after an attack, for example rape, has occurred for evidence to be collection from the victim of the attack. The evidence, typically in the form of biological materials which contain the DNA of the attacker, or fibres
10 from the attackers clothing, is collected using a number of techniques, for example by removing materials from beneath a victims finger nails and by taking swabs from the victim. Although such techniques result in the successful collection of evidence, there is always the risk that some evidence which could be used to identify the attacker is missed, and as a result of the
15 failure to collect such evidence, there is a risk that the attacker may not be caught or insufficient evidence to conclusively identify the attacker is collected.

It is an object of the invention to provide an evidence collection device and a
20 method of collecting evidence which can be used to reduce the risk of evidence failing to be collected.

According to a first aspect of the invention there is provided an evidence collection device comprising a housing having a closable lid, at least part of
25 the housing being defined by a strainer member adapted to allow water entering the housing to escape therefrom through the strainer member, but to collect, and retain within the housing, particulate matter carried by the water.

The strainer member includes a plurality of openings, the openings preferably being sufficiently small to ensure that human cells are retained within the housing. The openings of the strainer member may be of a uniform size. Alternatively, the openings may be of non-uniform size, for example the
5 openings in a central part of the strainer member being of smaller dimensions than those located towards the edges of the strainer member. Such an arrangement may be advantageous in that the larger openings allow water to escape from the housing at a relatively fast rate. A vortex formed as a result of the water passing through the housing tends to separate relatively large
10 particulate matter from smaller matter, the smaller matter tending to collect in the central part of the housing, where the openings in the strainer member are smaller, larger matter tending to collect at radially outer parts of the housing where the openings are larger, thus the provision of the larger openings need not significantly increase the risk of matter escaping from the housing.

15

The housing is conveniently of dimensions to allow it to be received within and close the outlet of a bath, shower or wash basin. The housing may be secured to or form an integral part of a liner, for example for a bath, shower or wash basin.

20

Another possible use for the device is on a mortuary table to collect evidence when a post mortem is being conducted. Again, the device could be included in a liner. If desired, the liner could take the form of a closable bag in which a body can be transported from, for example, the scene of a crime to the
25 mortuary.

The lid of the housing is conveniently securable in position on the remainder of the housing by screw threads. It will be appreciated, however, that other techniques could be used to secure the lid in position, for example the lid may

be snap-fitted to the remainder of the housing, and may be held captive to the housing, if desired, by a flexible strap.

According to another aspect of the invention there is provided a method of
5 collecting evidence comprising locating an evidence collection device of the
type defined hereinbefore within the outlet of a bath, shower or wash basin,
allowing the individual from whom evidence is to be collected to bath,
shower or wash, allowing water to escape from the bath, shower or basin, the
water entering the housing and passing through the strainer member,
10 particulate matter carried into the housing being unable to pass through the
strainer member and being retained within the housing, and closing the lid to
trap the collected matter within the housing.

It will be appreciated that, where used in a shower, a step of opening the lid
15 may be performed prior to commencement of showering, whereas when used
in a bath or basin, the lid may be kept in a closed condition until after
completion of the bath/wash, and then removed to allow the water to drain
from the bath/basin.

20 A subsequent operation of wiping the bath, shower or basin using a cloth or
wipe having a known DNA content may be performed to collect any matter
adhering thereto.

The invention will further be described, by way of example, with reference to
25 the accompanying drawing (Figure 1) which is a diagrammatic cross
sectional view of an evidence collection device in accordance with an
embodiment of the invention.

The attached drawing illustrates an evidence collection device which comprises a generally cylindrical housing 10 of short axial extent, the housing 10 being of diameter chosen to allow the housing 10 to be received with the outlet of a bath. The housing 10 is of open, tubular form, and is
5 conveniently manufactured from a rubber or synthetic rubber-like material dimensioned such that, when received within the outlet of a bath, the housing 10 forms a substantially fluid tight seal within the outlet.

The lower end 12 of the housing 10 is closed by a strainer member 14. The
10 strainer member 14, in a simple embodiment of the invention, takes the form of a mesh material having openings 16 therein of dimensions sufficiently small that, although water can pass through the openings 16 of the mesh material, particulate matter carried by the water, for example human cells, hairs, fibres from clothing etc, cannot pass through the openings 16.

15 The upper part 18 of the housing 10 is provided with internal screw thread formations cooperable with external screw thread formations provided on a lid member 24. The lid member 24 is of generally circular shape, arranged to be received within the upper part 18 of the housing 10. When secured in
20 position, the housing 10, lid member 24 and strainer member 14 together define a closed volume 26. As shown, to assist in securing the lid member 24 in position, a handle 28 is formed thereon.

In use, after collecting evidence from an individual in the usual manner, the
25 individual baths, the collecting device being placed in the outlet of the bath instead of using a conventional bath plug, the lid member 24 of the collection device closing the upper part 18 of the housing 10. After bathing, the lid member 24 is removed, allowing bath water to enter the housing 10. The water entering the housing 10 is able to pass through the openings 16 of the

strainer member 14, the water then flowing through the outlet of the bath in the usual manner. Particulate matter carried by the water entering the housing 10 is unable to pass through the openings 16 and is trapped within the housing 10.

5

After the bath has emptied, the lid member 24 is secured in position on the housing 10, trapping the collected matter within the volume 26, and the collection device is removed from the outlet of the bath and sent to a suitable laboratory for examination.

10

Relatively low density matter tends to float upon the surface of the bath water, and may adhere to the bath rather than enter the collection device. Such matter may be collected by wiping the bath using a cloth or wipe having a known DNA content and supplying the cloth or wipe to the laboratory with the collection device.

15

Although the description hereinbefore is of the use of the device with a bath, the device may also be used with a wash basin or shower, different size devices being used in different applications. Where used with a shower, the lid component may be removed prior to showering to avoid forming a build up of water within the shower tray.

20

The device may be modified in a number of ways. For example, the lid member may be snap fitted rather than screw fitted to the remainder of the housing, and it may be held captive to the housing, if desired, thus reducing the risk of loss or contamination. Further, where evidence of a particular type is sought, then the dimensions of the openings 16 of the strainer member 14 may be tailored to trap particles of the desired matter but to allow smaller matter to pass through the openings 16.

25

As water passing through an opening tends to form a vortex, and the vortex tends to separate the matter carried with the water so that relatively large particulate matter moves radially outward whereas smaller matter tends to occupy a more central position, the openings 16 of the strainer member 14 need not be of a uniform size, but rather may be relatively large adjacent the periphery of the strainer member 14 where the larger matter tends to collect and smaller at a central part of the strainer member 14 where the smaller matter tends to collect without significantly impairing the ability of the device to collect evidence. Such an arrangement may be advantageous in that the speed with which water can pass through the housing is increased.

Further, if desired, one or more ribs may be provided over the surface of the strainer member 14 to assist in the collection of evidence, and/or a collection chamber may be provided radially outwardly of the strainer member 14 for use in the retention of relatively large matter.

Clearly, in order to ensure that the evidence is not contaminated, it is important to ensure that the volume 26 of the device is of known DNA content prior to use. The device will thus be supplied with the lid in its closed condition, removal of the lid to allow water to enter the housing only occurring after installation of the device in the outlet of a bath, shower, wash basin or the like. As the strainer member does not allow matter to pass therethrough, after use, the risk of contamination of the collected evidence is small. As the device is of known DNA content, the laboratory examination of the device, after use to collect evidence, can include a step of examining the collected evidence for DNA, ignoring the DNA known to be present in the device before use to collect the evidence.

Although the device is primarily intended for use by the victims of crime, conveniently in their own homes, the device may also be used by suspected perpetrators. In such circumstances, it may be desirable to locate the device in such a position as to ensure that the suspected attacker cannot remove, 5 tamper with or impair the evidence collecting ability of the device. The device may also be suitable for use in other applications.

In a modification to the arrangement described hereinbefore the device forms part of, for example an integral part of, a liner for use in a bath, shower or 10 wash basin. In use, the liner is positioned in the bath, shower or wash basin, and the user washes. After use, the step described hereinbefore of wiping the bath, shower or wash basin to collect evidence can be omitted as any such evidence will be collected within the liner. The liner may be closable to prevent contamination of the evidence. Alternatively, the liner can be 15 positioned within a suitable container, after use, to prevent contamination. As discussed hereinbefore, suitable steps should be taken prior to use to prevent contamination of the device.

Another use for the device is in collecting evidence at a post mortem, the 20 device being used in association with, for example, the outlet or drain of a mortuary table. Again, the device could form part of a liner. The liner could form a bag into which a body can be placed for transportation from, for example, the scene of a crime to the mortuary. It will be appreciated that the uses described hereinbefore are not exhaustive, and that the device may be 25 used in other applications in which evidence is to be collected.

CLAIMS

1. An evidence collection device comprising a housing having a closable lid, at least part of the housing being defined by a strainer member adapted to
5 allow water entering the housing to escape therefrom through the strainer member, but to collect, and retain within the housing, particulate matter carried by the water.
2. A device as claimed in Claim 1, wherein the strainer member includes
10 a plurality of openings, the openings being sufficiently small to ensure that human cells are retained within the housing.
3. A device as claimed in Claim 1 or Claim 2, wherein the openings of the strainer member are of a uniform size.
- 15 4. A device as claimed in Claim 1 or Claim 2, wherein the openings are of non-uniform size.
5. A device as claimed in Claim 4, wherein the openings in a central part
20 of the strainer member are of smaller dimensions than those located towards the edges of the strainer member.
6. A device as claimed in any one of the preceding claims, wherein the housing is of dimensions to allow it to be received within the outlet of a bath,
25 shower or wash basin.
7. A device as claimed in any one of the preceding claims, wherein the lid of the housing is securable in position on the remainder of the housing by screw threads.

8. A device as claimed in any one of the preceding claims, further comprising a liner having an outlet, the housing being secured to the liner at the outlet thereof.

5

9. A device as claimed in Claim 8, wherein the liner is closable.

10. A method of collecting evidence comprising locating an evidence collection device as claimed in any one of the preceding claims within the outlet of a bath, shower or wash basin, allowing the individual from whom evidence is to be collected to bath, shower or wash, allowing water to escape from the bath, shower or basin, the water entering the housing and passing through the strainer member, particulate matter carried into the housing being unable to pass through the strainer member and being retained within the housing, and closing the lid to trap the collected matter within the housing.

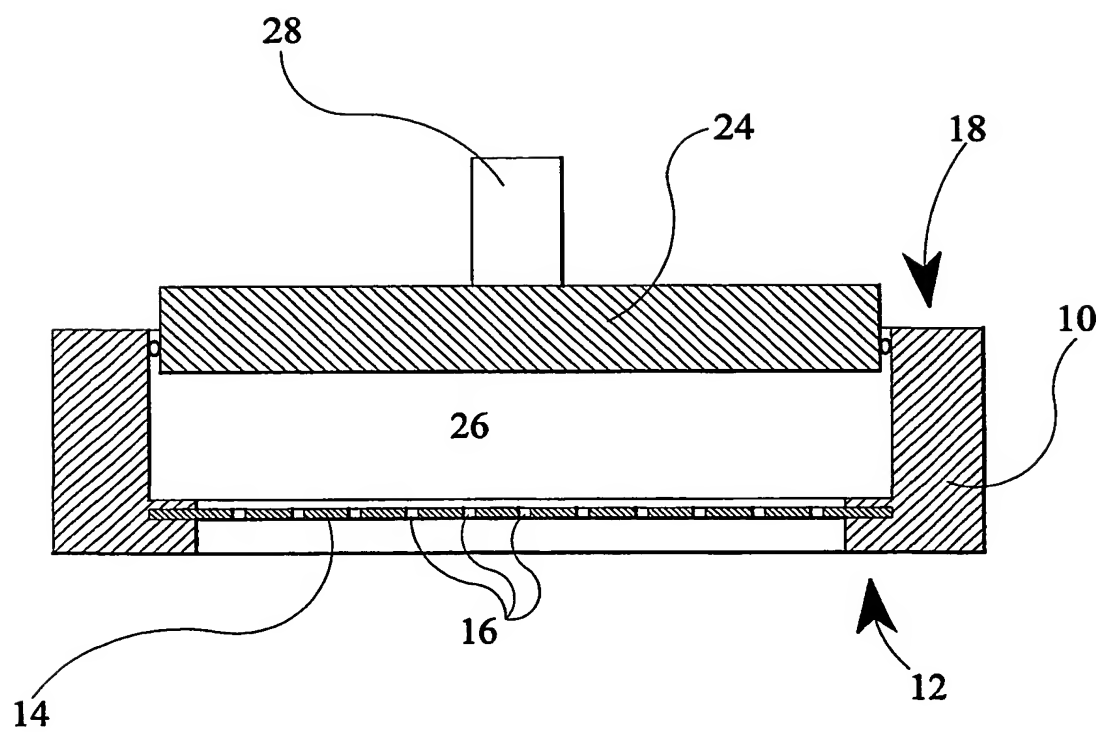
15

11. A method as claimed in Claim 10, further comprising a step of wiping the bath, shower or basin using a cloth or wipe of known DNA content to collect any matter adhering thereto.

20

12. An evidence collection device substantially as hereinbefore described with reference to the accompanying drawing.

1 / 1



PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference RAB.P04378PC	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 01/ 03242	International filing date (day/month/year) 19/07/2001	(Earliest) Priority Date (day/month/year)
Applicant CROUCH, PETER, ANTHONY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 01/03242

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N1/02 G01N1/34 //E03C1/26,

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N E03C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1 950 817 A (JESS ROSSMAN) 13 March 1934 (1934-03-13)	1,3,6
A	page 1, line 3 - line 16; figures ---	10
X	US 4 949 406 A (CANELLI GIUSEPPE) 21 August 1990 (1990-08-21)	1-3,6
A	column 3, line 56 - line 58 ---	10
X	US 5 578 459 A (STIMPSON DONALD I ET AL) 26 November 1996 (1996-11-26)	1,2,7-9
A	column 6, line 25 -column 7, line 4 ---	10
X	EP 0 458 622 A (BARRINGER TECHNOLOGIES INC) 27 November 1991 (1991-11-27)	1,2,8,9
A	column 4, line 25 - line 30; figures 1,2 ---	10
	-/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

19 March 2002

Date of mailing of the international search report

28/03/2002

Name and mailing address of the ISA

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Authorized officer

Hodson, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 01/03242

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 043 082 A (JOHNSON TOD S ET AL) 27 August 1991 (1991-08-27)	1,2,7-9
A	column 3, line 35 -column 4, line 17; figures	10
A	----- DE 44 34 544 C (HARTMANN WOLFGANG DR ;KLAPPROTH CARL EBERHARD DR (DE)) 18 April 1996 (1996-04-18) -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 01/03242

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 1950817	A	13-03-1934	NONE	
US 4949406	A	21-08-1990	NONE	
US 5578459	A	26-11-1996	AT 212563 T AU 1186395 A CA 2176139 A1 DE 69429783 D1 EP 0730495 A1 JP 9505890 T WO 9514533 A1 US 5976824 A	15-02-2002 13-06-1995 01-06-1995 14-03-2002 11-09-1996 10-06-1997 01-06-1995 02-11-1999
EP 0458622	A	27-11-1991	EP 0458622 A2	27-11-1991
US 5043082	A	27-08-1991	NONE	
DE 4434544	C	18-04-1996	DE 4434544 C1	18-04-1996